

AMENDMENT TO CLAIMS:

The following listing of claims will replace all prior versions and listings of the claims in the above-identified application.

Listing of Claims:

Claim 1 (currently amended): A video coding apparatus comprising:
coding/decoding circuitry for providing motion-compensated inter-frame prediction coding on input frames by using reference frames so that the input frames are coded into an intra-frame coded picture, a predictive coded picture or a bi-directionally predictive coded picture and decoding said coded frames to produce said reference frames; and

A²
decision circuitry for determining a magnitude of motion of said input frames relative to said reference frames and a time-varying rate of said magnitude, determining an interval between successive frames of said predictive coded picture according to the magnitude of motion and the time-varying rate of said magnitude, and reordering said input frames according to the determined interval.

Claim 2 (currently amended): A video coding apparatus as claimed in claim 1, wherein said decision circuitry is configured to vary increase said interval with when the determined magnitude of said motion and the determined time-varying rate of said magnitude decreases and decreases said interval when the determined magnitude of said motion increases.

Claim 3 (currently amended): A video coding apparatus as claimed in claim 1, wherein said decision circuitry is configured to increment said interval when said magnitude of motion and said time-varying rate of said magnitude are simultaneously smaller than respective thresholds is smaller than a first threshold and to decrement said interval when said magnitude of motion and said time-varying rate of said magnitude are simultaneously greater than respective thresholds is greater than a second threshold.

Q 3

Claim 4 (currently amended): A video coding apparatus comprising:

a first memory for storing a plurality of input frames;

a second memory for storing reference frames;

motion vector detection circuitry for detecting motion vectors in frames from said first memory relative to reference frames selectively supplied from said second memory according to a control signal;

coding/decoding circuitry for providing motion-compensated inter-frame prediction and coding on a frame supplied from said first memory according to the detected motion vectors and said control signal so that the frame is coded into an intra-frame coded picture, a predictive coded picture or a bi-directionally predictive coded picture and locally decoding the coded frame and storing the decoded frame in said second memory as one of said reference frames;

mean value calculation circuitry for calculating, at frame intervals, a mean value of the detected motion vectors; and

decision circuitry for calculating a time-varying rate of said mean value and determining an interval between successive frames of said predictive coded picture

according to the calculated mean value and the calculated time-varying rate of said mean value, and modifying said control signal according to the determined interval.

Claim 5 (currently amended): A video coding apparatus as claimed in claim 4, wherein said decision circuitry is configured to vary increase said interval inversely with when said mean value and said time-varying rate decreases and decrease said interval when said mean value increases.

a 3

Claim 6 (currently amended): A video coding apparatus as claimed in claim 4, wherein said decision circuitry is configured to increment said interval when said mean value and said time-varying rate are simultaneously smaller than respective thresholds a first threshold and to decrement said interval when said mean value and the time-varying rate are simultaneously greater than respective thresholds a second threshold.

Claim 7 (original): A video coding apparatus as claimed in claim 6, wherein said mean value comprises a horizontal component and a vertical component and wherein said decision circuitry is configured to increment said interval when said horizontal and vertical components are simultaneously smaller than respective thresholds and decrement said interval when one of said horizontal and vertical components is greater than a threshold.

Claim 8 (cancelled).

Q 3

Claim 9 (currently amended): A video coding apparatus as claimed in claim [[8]] 5, wherein said mean value comprises a horizontal component and a vertical component and wherein said decision circuitry is configured to determine, as said time-varying rate, a difference between successive ones of said mean value of horizontal component and a difference in a vertical direction between successive ones' of said mean value of vertical component and increment said interval when said differences are simultaneously smaller than respective thresholds.

Claim 10 (original): A video coding apparatus as claimed in claim 4, wherein

 said coding/decoding circuitry comprises:
 motion-compensated inter-frame prediction circuitry for performing motion-compensated inter-frame prediction on an input frame supplied from said first memory according to the detected motion vectors and to a control signal applied thereto;
 subtraction circuitry for producing a differential frame from a frame supplied from the first memory and an output signal of said prediction circuitry;
 encoding circuitry for coding said differential frame so that said input frame is coded into an intra-frame coded picture, a predictive coded picture or a bi-directionally predictive coded picture;
 decoding circuitry for decoding the coded differential frame; and

summing circuitry for producing a combined frame from the decoded differential frame and the output of signal of said prediction circuitry and storing the combined frame into said second memory.

Q3

Claim 11 (original): A video coding apparatus as claimed in claim 10, wherein said encoding circuitry comprises a discrete cosine transform (DCT) coder for transforming said differential frame to DCT coefficients, a quantizer for quantizing the DCT coefficients, and a variable length coder for transforming the quantized coefficients and the motion vector detected by said motion vector detection circuitry to run-length codes, and wherein said decoding circuitry comprises a dequantizer for dequantizing the quantized differential frame and a DCT decoder for decoding the dequantized differential frame.

Claim 12 (currently amended): A video coding method comprising the steps of:

- a) providing motion-compensated inter-frame prediction and coding on input frames by using a reference frame so that the input frames are coded into an intra-frame coded picture, a predictive coded picture or a bi-directionally predictive coded picture;
- b) locally decoding said coded frames to produce said reference frames;
- c) determining a magnitude of motion of said input frames relative to said reference frames and a time-varying rate of said magnitude;

d) determining an interval between successive frames of said predictive coded picture according to the determined magnitude of motion and said time-varying rate of said magnitude; and

e) reordering said input frames according to the determined interval.

(a) 3

Claim 13 (currently amended): A video coding method as claimed in claim 12, wherein the step (c) comprises the steps of detecting motion vectors in said input frames relative to said reference frames and calculating, at frame intervals, a mean value of the detected motion vectors to represent said magnitude of motion and a time-varying rate of said mean value.

Claim 14 (currently amended): A video coding method as claimed in claim 12, wherein the step (d) comprises varying increasing said interval inversely with when the determined magnitude of motion and the determined time-varying rate of said magnitude decreases and decreasing said interval when the determined magnitude of motion increases.

Claim 15 (currently amended): A video coding method as claimed in claim 12 13, wherein the step (d) comprises the step of incrementing said interval when said mean value and said time-varying rate of the mean value are simultaneously is smaller than respective thresholds a first threshold and decrementing said interval when said mean value and said time-varying rate of the mean value are simultaneously is greater than respective thresholds a second threshold.

Claim 16 (currently amended): A video coding method as claimed in claim 17 13, wherein said mean value comprises a horizontal component and a vertical component and wherein the step (d) comprises the steps of incrementing said interval when said horizontal and vertical components are simultaneously smaller than respective thresholds and decrementing said interval when one of said horizontal and vertical components is greater than a threshold.

a 3

Claim 17 (cancelled).

Claim 18 (currently amended): A video coding method as claimed in claim 17 13, wherein said mean value comprises a horizontal component and a vertical component and wherein the step (d) comprises the steps of determining, as said time-varying rate, a difference between successive ones of said mean value of horizontal component and a difference in a vertical direction between successive ones of said mean value of vertical component and incrementing said interval when said differences are simultaneously smaller than respective thresholds.